AMD Athlon™ XP Processor Benchmarking and Model Numbering Methodology

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Defining Performance

In 1981 the first x86 PC was offered for sale. As a result of its success, succeeding generations were quickly made available based on ever-higher performing engines: the 286, 386, and 486 microprocessors. With each new generation of processor, end users reaped the benefits of both better processor architectures and higher clock frequencies. Over the past 20 years end users have come to view higher performance (which is difficult to quantify) as being synonymous with higher frequency (which is much easier to quantify).

AMD believes that what people really care about, however, is not the frequency of their processor, but the performance it delivers from their applications. Consider the definition of microprocessor performance:

Processor Performance = (Work Per Clock Cycle) x (Clock Speed)

As you can see, while processor frequency contributes to overall CPU performance, it is not the only factor.

So how did frequency come to be the sole indicator of performance to consumers? The answer is simple. The first several generations of PC microprocessors from both AMD and Intel (i.e. the 8086, 286, 386, and 486) were based on the same internal architecture and therefore performed nearly an identical amount of work per clock cycle. As a result, the only variable in the performance equation was frequency; therefore frequency really was the primary determinant of CPU performance.

Performance and Frequency

With the advent of the AMD Athlon™ processor and the Intel Pentium® 4 processor, the design architectures of these two companies fundamentally diverged.

This design divergence has resulted in a difference in work done per clock cycle. Thus, microprocessors operating at identical frequencies may offer dramatically different levels of performance. Consequently, frequency is no longer the most meaningful metric for judging relative microprocessor performance. Today's end users need a better

approach for comparing relative processor performance. This new approach must recognize that end users:

1. Care about the performance of the applications that they use and care less about the results of synthetic tests
2. Typically use a variety of application software
3. Care about the performance of the system that they purchase
4. Need the ability to easily and simply conduct comparative shopping

AMD plans to drive the True Performance Initiative (TPI)—a strategic initiative with industry leaders and consumer advocates to develop a reliable processor performance metric that PC users can trust.

Benchmarking Methodology

Until the new metric is available, AMD is committed to accurately indicating the application performance of our processors, and has assembled a suite of industry standard benchmarks and applications that we believe reflect typical end user applications.

Specifically, AMD has identified three usage models which we believe best exemplify the commercial and consumer end user PC experience: Office Productivity, Digital Media, and 3DGaming. The following benchmarks and applications are used to represent these end user experiences:

Office Productivity

Business Winstone™ 2001

Microsoft® Office 2000 (Access, Excel, Frontpage, PowerPoint, Word), Microsoft Project 98, Lotus Notes R5, NicoMak WinZip, Norton AntiVirus, Netscape Communicator

SYSmark™ 2001, Office Productivity

Microsoft Office 2000 (Access, Excel, Outlook, PowerPoint, Word), Netscape Communicator 6.0, Dragon Naturally Speaking Preferred v.5, WinZip 8.0, McAfee VirusScan 5.13

Digital Media

Content Creation Winstone™ 2001

Adobe® Photoshop® 5.5, Adobe Premier 5.1, Macromedia Director 8.0, Macromedia Dreamweaver 3.0, Netscape Navigator 4.73, Sonic Foundry Sound Forge 4.5

SYSmark2001, Internet Content Creation

Adobe Photoshop 6.0, Adobe Premier 6.0, Macromedia Dreamweaver 4.0, Macromedia Flash 5, Microsoft Windows Media Encoder 7

3DGaming

Games

Half-life Smokin', Expendable, Q3, AquaMark, Dronez, Unreal Tournament, Evolva, MDK2, Serious Sam

3D WinBench™ 2000 (Hardware T&L)

3D WinBench 2000 (D3D software)

3DMark™2001 (Hardware T&L)

3DMark2001 (D3D software)

The results of the individual tests[1] within a usage model are equally weighted and averaged together to create a relative performance score for that usage model. The combined scores from each of the three usage models are then averaged together to provide a single metric that is designed to relate overall system performance (see Figure 1).

When viewing these benchmark results and attempting to analyze their meaning, a normalization process is useful. This normalization process provides a much easier way to compare the data for the reader and provides a simpler method for determining the significance or insignificance of any deltas in performance. Configurations for the

[1] Please see "Appendix A - Individual Benchmarking Test Methodology" for detailed methodology used to generate individual tests.

AMD Athlon processor and AMD Athlon XP processor systems are identical and can be seen in Appendix F. Actual scores can be seen in the table in Appendix B.

Independent Benchmark Auditing

To ensure customer confidence in AMD benchmarking methodology, Arthur Andersen L.L.P. is independently examining the AMD Athlon™ and AMD Athlon XP processor performance benchmarks. This examination includes independent observation and tests of the system configuration, benchmark procedures and the recording of results.

A full report detailing the results of the auditing process will be available on the AMD Web site.

Improving Architectural Performance

As shown in the chart below comparing the current AMD Athlon processor and the new AMD Athlon processors based on the core codenamed "Palomino," performance advances can be made through internal architecture enhancements that are not solely dependent on frequency.

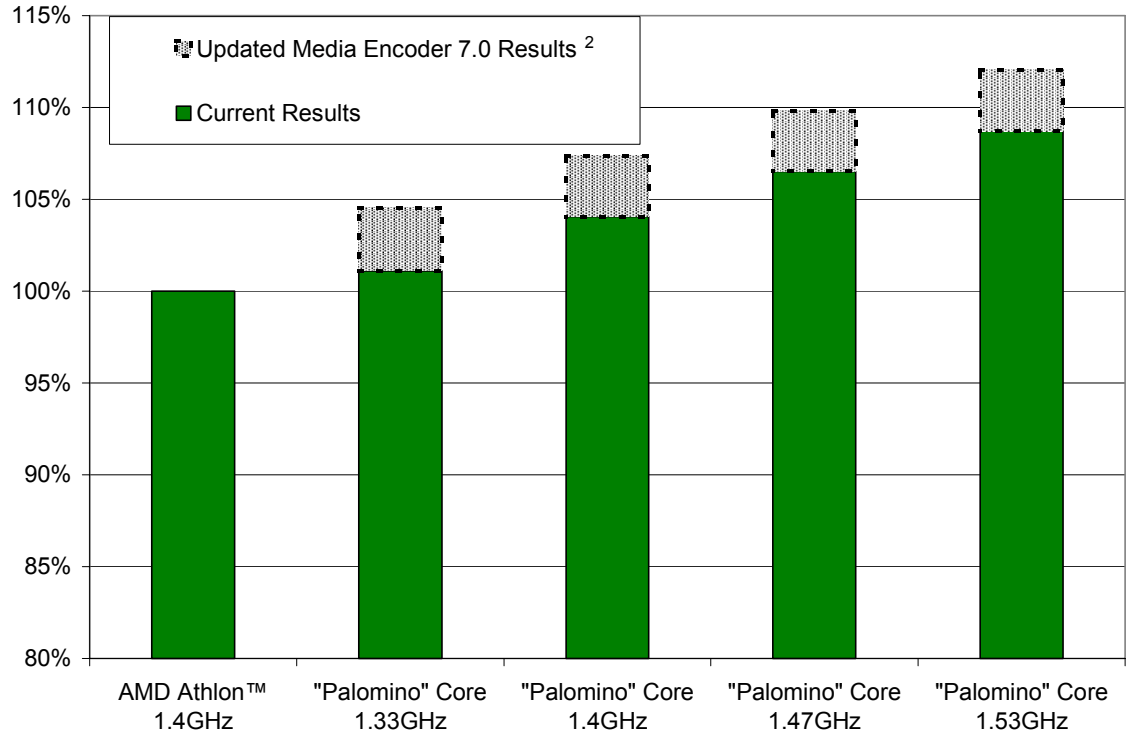

Figure 1: Overall Desktop Performance[2]

Since frequency should no longer be the sole indicator of performance, more information must be provided to the end user to better understand a processor's performance capabilities. The most useful information is that which communicates relative real-world performance on a variety of software applications.

Model Number Approach

Desktop processors based on the "Palomino" core will be marketed as the AMD Athlon™ XP processor. AMD will use model numbers to distinguish versions of the AMD Athlon XP processors. Higher numbers equate to higher performance. The first member of the AMD Athlon XP processor family, the AMD Athlon XP processor 1500+ provides more performance than the current 1.4GHz AMD Athlon processor.

[2] Updated Windows(R) Media Encoder Results contain a software update that enables 3DNow!™ Professional technology in version 7.0 of Microsoft Windows Media Encoder. This software patch is not publicly available; however subsequent versions of Microsoft Windows Media Encoder are planned to enable support for 3DNow! Professional technology. Please see "Appendix E: Note on SYSmark2001 Internet Content Creation" for detailed explanation of expected overall desktop performance

The initial AMD Athlon™ XP processor models and their corresponding frequencies are shown below:

Processor and Model Number	Core Operating Frequency
AMD Athlon™ XP 1500+	1.33 GHz
AMD Athlon™ XP 1600+	1.40 GHz
AMD Athlon™ XP 1700+	1.47 GHz
AMD Athlon™ XP 1800+	1.53 GHz

The relative application performance improvement between different members of the AMD Athlon XP processor family is supported in the following benchmark graphs.

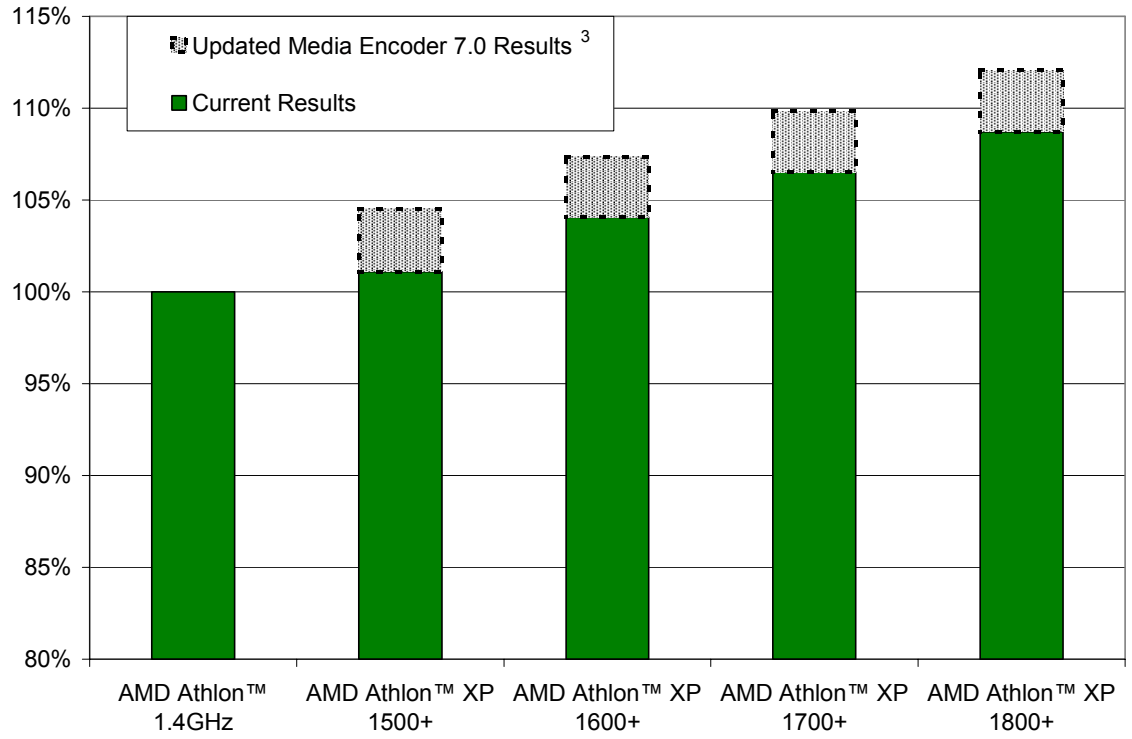

Figure 2: Overall Desktop Performance with Model Numbers[3]

[3] Please see footnote 2 and "Appendix E – Note on SYSmark2001 Internet Content Creation" for detailed explanation of 3DNow!™ Professional Enabled Results

Approximately three percentage points on this normalized overall desktop performance scale represent the typical performance difference that exists between different system price bands in the market today[4].

As can be seen by the above graph, AMD Athlon™ XP processors exceed the performance level of AMD Athlon processors currently on the market. The AMD Athlon XP processor model number system provides an easy and clear metric indicating relative application performance of members of the AMD Athlon XP family of processors.

Competitive Comparison

It is also important to consider how AMD Athlon XP processors perform relative to competitive PC processors. In order to provide an accurate comparison between systems based on the AMD Athlon XP processor and systems based on the Pentium 4 processor, system configurations were kept as similar as possible. The details of the system configurations utilized in this analysis are listed in Appendix F. For the purposes of this comparison, AMD has used the "best of breed" system configurations for both the AMD and Intel processor-based systems. Appendix D includes a comparison using more mainstream (SDRAM memory) configurations.

All tests were run on the Microsoft® Windows® XP operating system, as AMD expects it will be relevant to most purchasers of x86 PCs over the next several years. The results on the previous pages were obtained when the three suites of benchmarks and applications were run following the aforementioned methodology. All results have been normalized to a Pentium 4 processor running at 1.5GHz. Again, when viewing benchmark results and attempting to analyze their meaning, a normalization process is useful. Detailed scores and individual results for all AMD Athlon XP processors can be seen in Appendix B.

[4] See Appendix B for Raw Benchmarking Data

	Pentium® 4 1.5GHz	Pentium® 4 1.6GHz	Pentium® 4 1.7GHz	Pentium® 4 1.8GHz	AMD Athlon™ XP 1500+	AMD Athlon™ XP 1600+	AMD Athlon™ XP 1700+	AMD Athlon™ XP 1800+
Office Productivity								
Business Winstone™ 2001	100%	103%	107%	111%	129%	132%	133%	135%
SYSmark™ 2001 Office Productivity	100%	106%	111%	115%	121%	125%	128%	131%
Office Productivity	**100%**	**104%**	**109%**	**113%**	**125%**	**129%**	**131%**	**133%**
Digital Media								
Content Creation Winstone™ 2001	100%	105%	108%	113%	127%	131%	134%	136%
SYSmark™ 2001 Internet Content Creation	100%	108%	112%	119%	95%	99%	104%	108%
Updated Media Encoder 7 SYSMark 2001 Internet Content	100%	108%	112%	119%	114%	118%	122%	127%
Digital Media	**100%**	**106%**	**110%**	**116%**	**111%**	**115%**	**119%**	**122%**
Updated Media Encoder 7 Digital Media	**100%**	**106%**	**110%**	**116%**	**120%**	**124%**	**128%**	**132%**
Entertainment								
Half-life Smokin' (1024x768x32)	100%	106%	111%	117%	134%	139%	144%	149%
Expendable (1024x768x32)	100%	110%	115%	118%	165%	170%	173%	178%
QuakeIII Demo2 (640x480x16)	100%	107%	111%	115%	102%	105%	107%	109%
AquaMark (1024x768x32)	100%	102%	103%	104%	108%	108%	108%	108%
Dronez Generic (1024x768x32 Generic)	100%	107%	110%	113%	99%	100%	102%	102%
Unreal Tournment (1024x768x32)	100%	104%	106%	113%	129%	131%	134%	136%
Evolva - Benchmark (1024x768x32)	100%	103%	104%	106%	108%	109%	109%	110%
MDK2 (1024x768x32)	100%	105%	110%	114%	121%	124%	128%	131%
Serious Sam (1024x768x32)	100%	109%	113%	117%	145%	150%	154%	157%
3D WinBench™ 2000 (Hardware T&L)	100%	102%	103%	105%	104%	105%	105%	106%
3D WinBench™ 2000 (D3D Software)	100%	102%	103%	105%	104%	105%	106%	106%
3DMark™ 2001 (Hardware T&L)	100%	103%	106%	106%	102%	103%	104%	105%
3DMark™ 2001 (D3D software)	100%	105%	109%	112%	123%	125%	127%	131%
3DGaming	**100%**	**105%**	**108%**	**111%**	**119%**	**121%**	**123%**	**125%**
Desktop Overall								
Desktop Overall	**100%**	**105%**	**109%**	**113%**	**118%**	**122%**	**124%**	**127%**
Updated Media Encoder 7 Desktop Overall	**100%**	**105%**	**109%**	**113%**	**121%**	**125%**	**127%**	**130%**

Figure 3: Competitive Benchmark Results – Normalized Percentages

The following chart summarizes these normalized results:

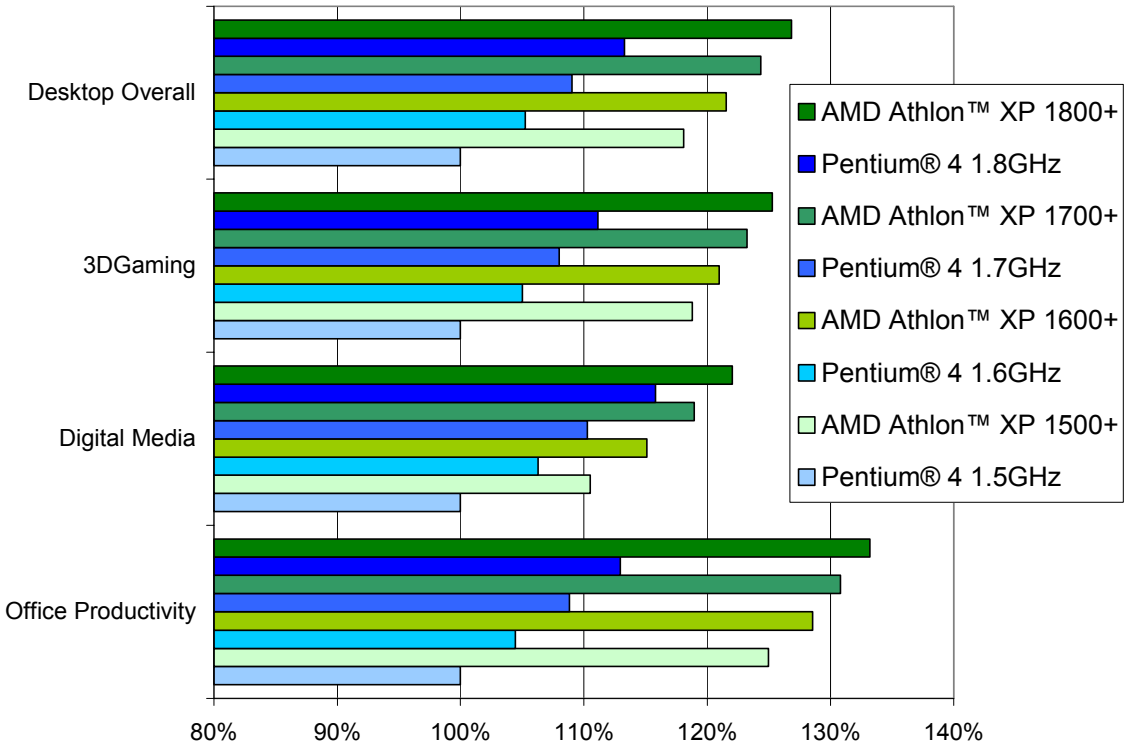

Figure 4: Normalized Competitive Benchmark Results[5]

The AMD Athlon XP processor clearly provides a performance advantage in the varying system price bands relative to competitive PC processors available on the market. The chart above demonstrates the different relative performance of AMD Athlon XP processors and Pentium 4 processors.

[5] For a detailed breakdown of benchmark categories see pages 3 and 4.

Summary

Over the past 20 years, processor frequency has been used as the proxy for comparing system performance. The use of frequency by itself to determine processor performance has become antiquated due to the fundamental architectural differences that exist between Intel and AMD processors. AMD processors benchmarked in this comparison outperform their Intel counterparts by a noticeable margin. In fact, in the benchmarks contained in this document, the AMD Athlon XP processor 1800+ outperforms the Intel Pentium 4 processor 1.8GHz by up to 60% on an industry standard entertainment application.

AMD believes that the idea of solely using a processor's frequency to compare performance between AMD and Intel processors needs to be replaced by a new approach to measure processor performance.

Appendix A – Individual Benchmarking Test Methodology

The PC is a dynamic environment, and the asynchronous nature of how PC's perform tasks leads to small inconsistencies in benchmark results. For example, every time a benchmark (or any application) is run, changes are made to the location of data on the hard drive. These changes (called fragmentation) can result in minor differences in the score of benchmarks that depend on disk performance (e.g. Business Winstone™2001). With that in mind, AMD designed the following procedure to ensure consistency and accuracy for all of our individual benchmark results.

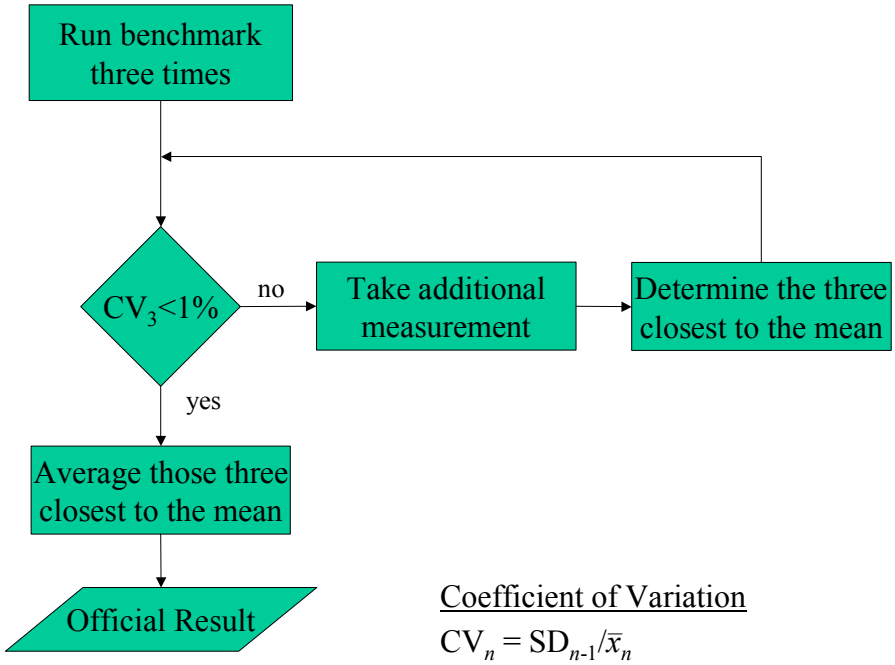

Figure 1: AMD Benchmarking Value Test Flowchart

The coefficient of variation is a measure of the relative dispersion of the data points. Designing the test to yield three data points so that their coefficient of variation is less than one percent means the data points are grouped together very tightly, thus the test is designed to reveal repeatable and accurate results.

Appendix B: Raw Benchmarking Data

	Pentium® 4 1.5GHz	Pentium® 4 1.6GHz	Pentium® 4 1.7GHz	Pentium® 4 1.8GHz	AMD Athlon™ XP 1500+	AMD Athlon™ XP 1600+	AMD Athlon™ XP 1700+	AMD Athlon™ XP 1800+
Office Productivity								
Business Winstone™ 2001	42.43	43.57	45.47	46.93	54.60	56.00	56.60	57.40
SYSmark™ 2001 Office Productivity	139.33	148.00	154.00	160.67	169.00	174.33	178.67	182.67
Digital Media								
Content Creation Winstone™ 2001	58.87	61.83	63.67	66.33	74.47	77.27	79.03	80.13
SYSmark™ 2001 Internet Content Creation	163.67	176.00	184.00	194.67	154.67	162.00	169.67	176.67
Updated Media Encoder 7 SYSMark 2001 Internet Content	163.67	176.00	184.00	194.67	186.67	192.67	200.33	207.67
Entertainment								
Half-life Smokin' (1024x768x32)	55.22	58.70	61.53	64.63	74.09	76.72	79.73	82.38
Expendable (1024x768x32)	78.36	86.27	89.93	92.53	129.67	133.40	135.67	139.20
QuakeIII Demo2 (640x480x16)	184.13	197.25	204.25	211.43	187.73	192.47	197.37	201.33
AquaMark (1024x768x32)	31.17	31.80	32.20	32.30	33.53	33.53	33.67	33.60
Dronez Generic (1024x768x32 Generic)	145.33	155.53	159.46	163.79	143.65	145.63	148.00	148.13
Unreal Tournment (1024x768x32)	56.91	59.23	60.53	64.47	73.51	74.60	76.41	77.49
Evolva - Benchmark (1024x768x32)	125.97	129.53	131.40	133.25	136.67	137.40	137.87	138.73
MDK2 (1024x768x32)	131.27	138.27	143.83	150.21	158.43	162.83	167.67	171.93
Serious Sam (1024x768x32)	72.03	78.57	81.10	84.25	104.60	107.73	111.07	113.30
3D WinBench™ 2000 (Hardware T&L)	194.00	197.00	200.00	204.00	202.00	203.67	204.33	206.00
3D WinBench™ 2000 (D3D Software)	162.50	166.00	168.00	170.00	169.00	170.00	171.67	172.67
3DMark™ 2001 (Hardware T&L)	5323.33	5479.00	5628.00	5651.00	5427.00	5472.33	5548.67	5589.67
3DMark™ 2001 (D3D software)	3356.67	3515.33	3654.00	3759.00	4115.00	4195.00	4252.33	4383.67

Appendix C: Competitive Benchmark Comparison

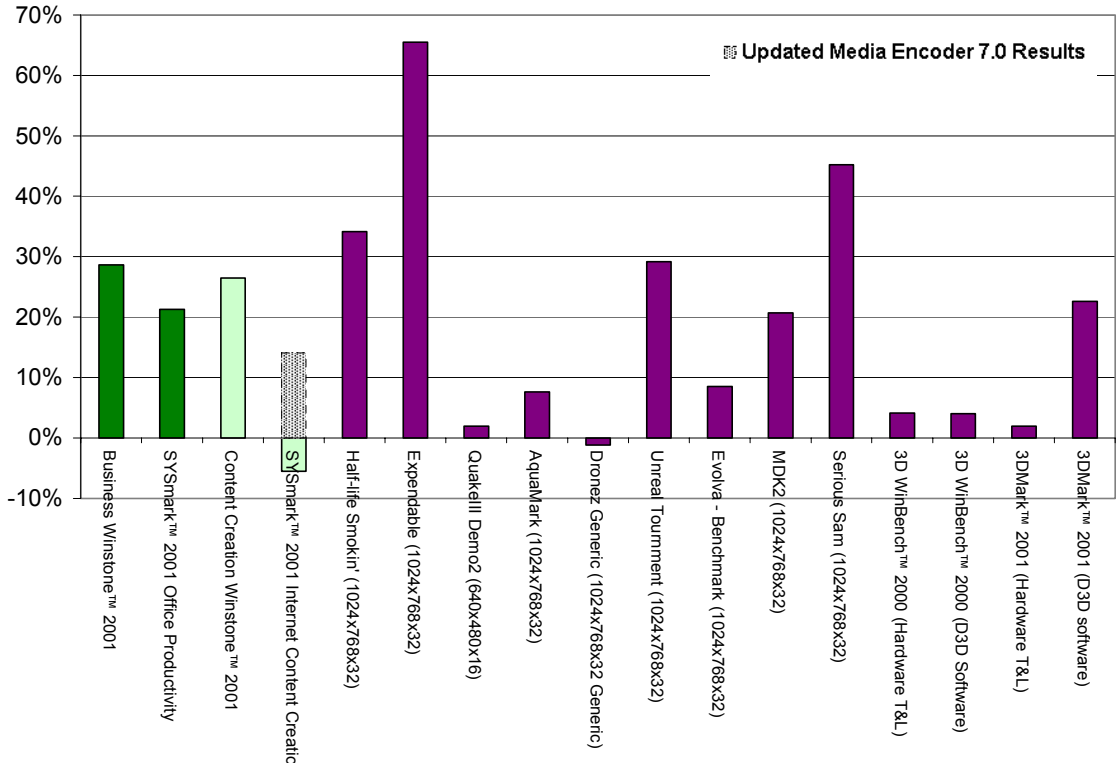

Figure 1: AMD Athlon™ XP processor 1500+ outperforms the competitive Pentium® 4 1.5GHz processor overall

Note: SYSmark™ 2001 Internet Content Creation is shown with (outlined) and without (in green) 3DNow!™ Professional technology enabled in Windows Media Encoder 7[6][7].

[6] Please see "Appendix E: Note on SYSmark2001 Internet Content Creation" for more information.
[7] See Appendix F for detailed system configuration information.

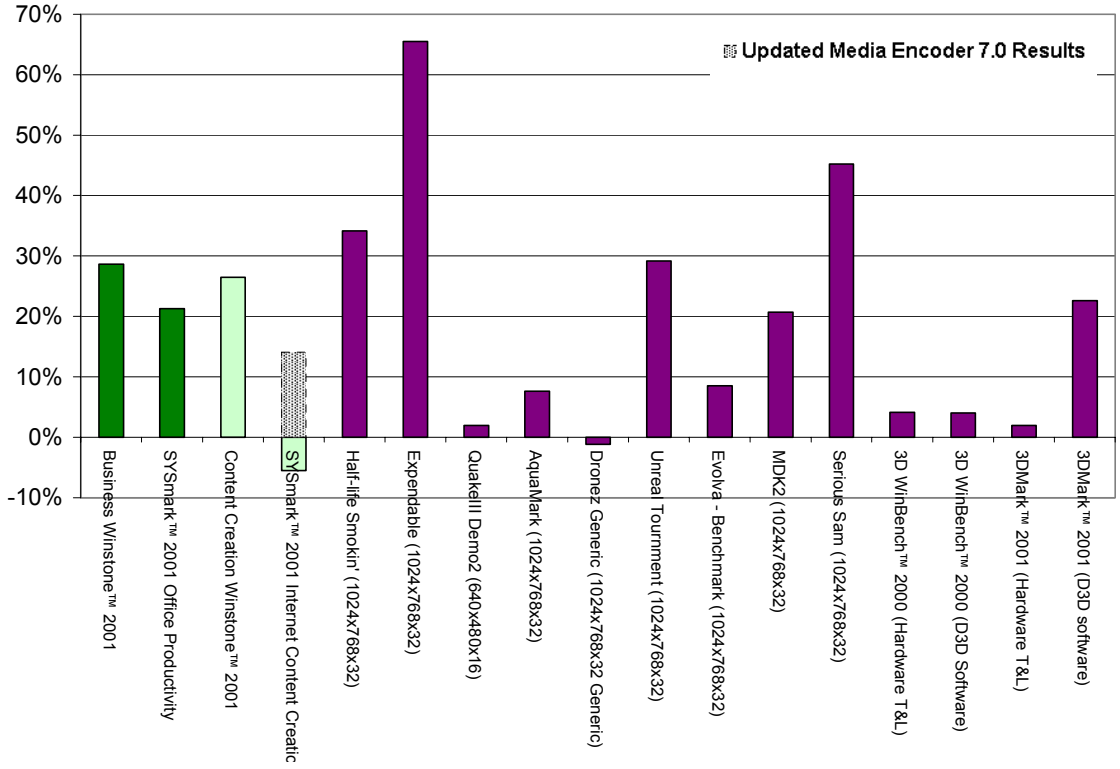

Figure 2: AMD Athlon™ XP processor 1600+ outperforms the Pentium® 4 1.6GHz processor overall

Note: Sysmark™ 2001 Internet Content Creation is shown with (outlined) and without (in green) 3DNow!™ Professional technology enabled in Windows Media Encoder 7[8][9].

[8] Please see "Appendix E: Note on SYSmark2001 Internet Content Creation" for more information.
[9] See Appendix F for detailed system configuration information.

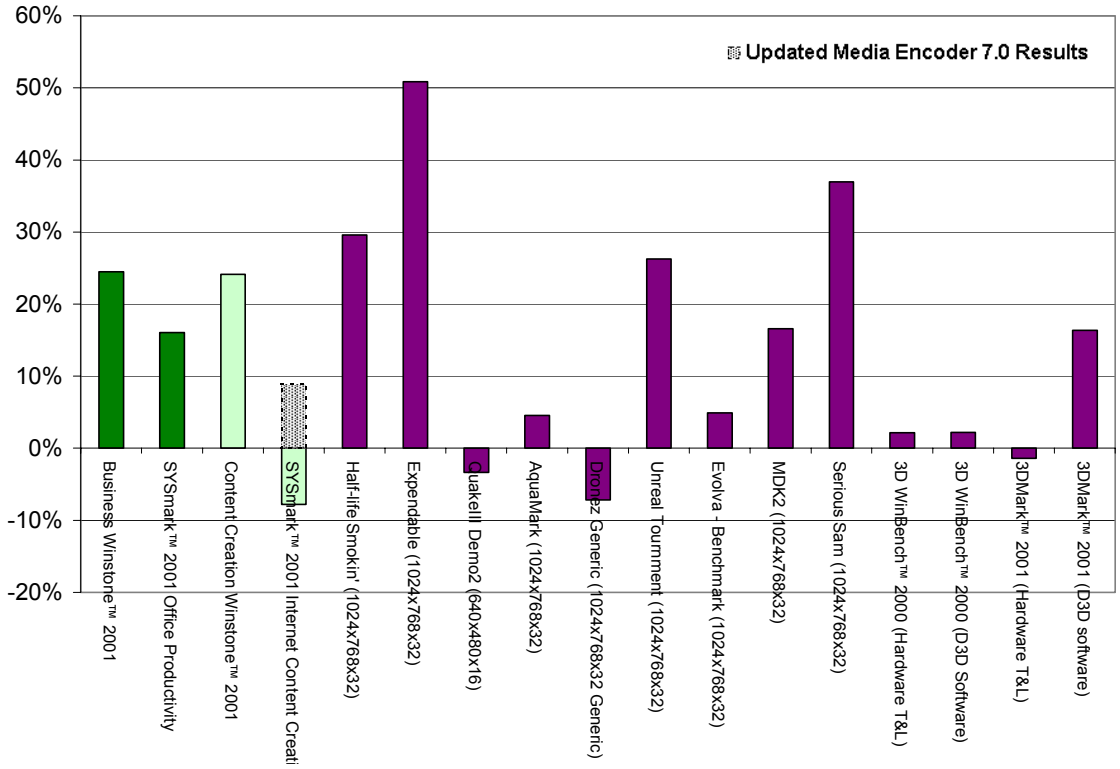

Figure 3: AMD Athlon™ XP processor 1700+ outperforms the Pentium® 4 1.7GHz processor overall

Note: Sysmark™ 2001 Internet Content Creation is shown with (outlined) and without (in green) 3DNow!™ Professional technology enabled in Windows Media Encoder 7[10][11].

[10] Please see "Appendix E: Note on SYSmark2001 Internet Content Creation" for more information.
[11] See Appendix F for detailed system configuration information.

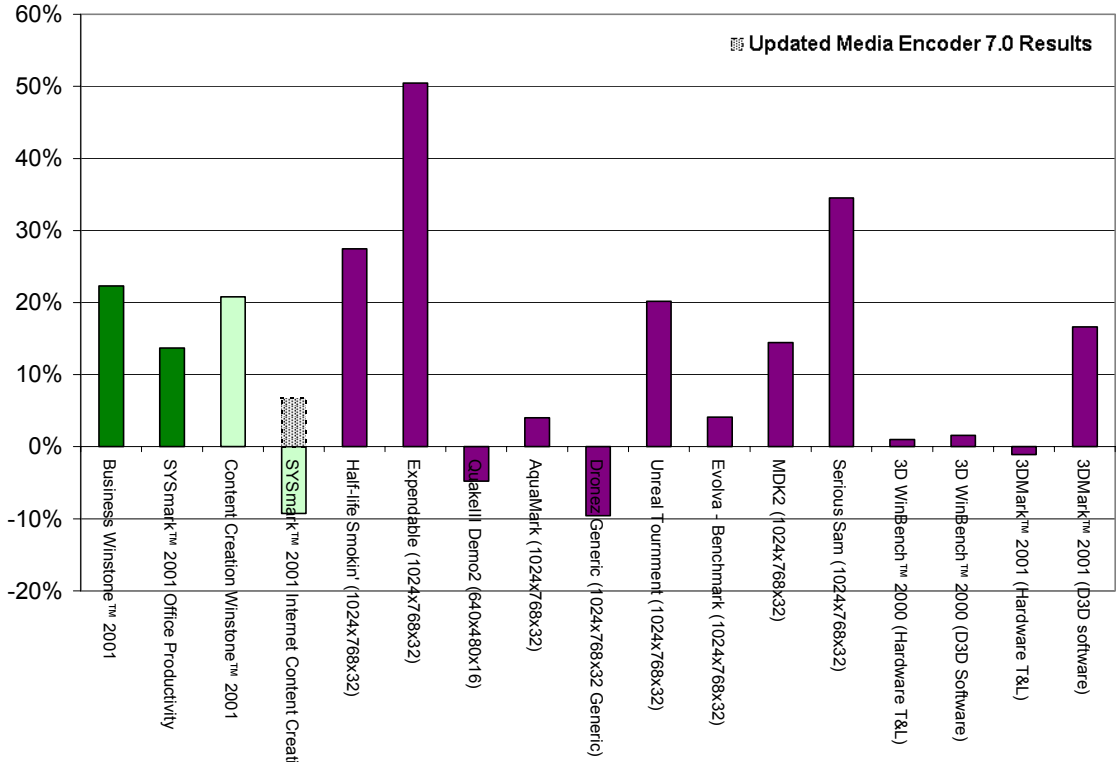

Figure 4: AMD Athlon™ XP processor 1800+ outperforms the Pentium® 4 1.8GHz processor overall

Note: Sysmark™ 2001 Internet Content Creation is shown with (outlined) and without (in green) 3DNow!™ Professional technology enabled in Windows Media Encoder 7[12][13].

[12] Please see "Appendix E: Note on SYSmark2001 Internet Content Creation" for more information.
[13] See Appendix F for detailed system configuration information.

Appendix D: SDRAM Performance Data

The AMD Athlon XP processor modeling number system is based upon benchmarking results run on the system configurations outlined in Appendix F. These configurations represent the highest performance systems available for their respective processors, however other configurations are available.

To demonstrate the completeness of our modeling number system, AMD also tested the respective processors in lower end configurations. The system configurations are provided in Appendix F and the benchmarking results are given below:

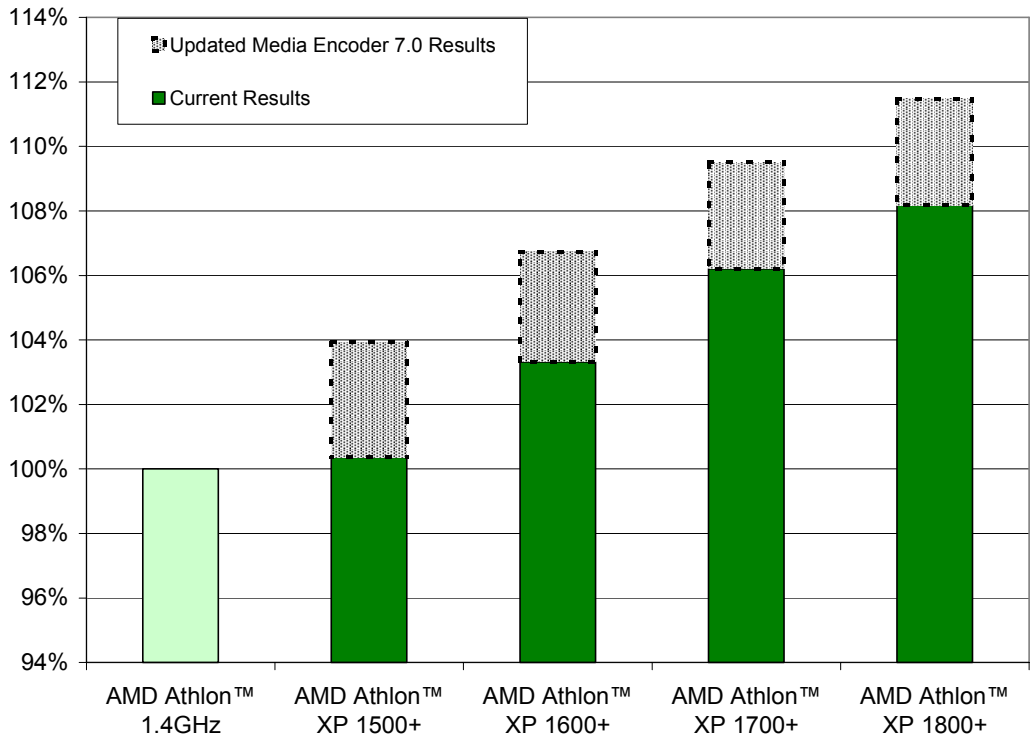

Figure 1: Overall SDRAM Configuration Desktop Performance

	Pentium® 4 1.5GHz	Pentium® 4 1.6GHz	Pentium® 4 1.7GHz	Pentium® 4 1.8GHz	AMD Athlon™ XP 1500+	AMD Athlon™ XP 1600+	AMD Athlon™ XP 1700+	AMD Athlon™ XP 1800+
Office Productivity								
Business Winstone™ 2001	40.70	42.00	43.50	44.87	51.60	53.37	54.40	55.47
SYSmark™ 2001 Office Productivity	130.33	134.33	142.00	145.67	160.67	167.33	173.33	175.00
Digital Media								
Content Creation Winstone™ 2001	54.87	56.87	59.47	60.97	70.07	70.97	72.27	74.77
SYSmark™ 2001 Internet Content Creation	152.33	156.67	164.67	171.00	148.33	147.67	154.33	161.00
Updated Media Encoder 7 SYSMark 2001 Internet Content Creation	152.33	156.67	164.67	171.00	179.00	184.33	190.00	194.33
Entertainment								
Half-life Smokin' (1024x768x32)	49.49	51.27	53.45	54.69	69.20	71.73	74.02	76.30
Expendable (1024x768x32)	71.58	74.12	76.83	79.20	115.47	118.17	121.30	123.63
QuakeIII Demo2 (640x480x16)	149.33	154.17	159.67	161.67	170.20	173.60	176.87	180.20
AquaMark (1024x768x32)	29.50	29.83	30.40	31.27	31.83	32.17	32.00	32.07
Dronez Generic (1024x768x32 Generic)	112.87	113.71	115.35	118.99	119.40	121.63	121.90	123.80
Unreal Tournment (1024x768x32)	52.08	53.52	55.46	56.37	68.59	69.79	71.21	72.23
Evolva - Benchmark (1024x768x32)	113.80	116.37	118.67	119.50	127.67	128.70	130.30	131.23
MDK2 (1024x768x32)	119.70	125.01	129.27	134.70	146.43	150.33	154.17	157.87
Serious Sam (1024x768x32)	60.03	63.23	68.50	70.00	91.63	93.93	97.70	100.40
3D WinBench™ 2000 (Hardware T&L)	179.00	182.00	184.50	187.00	193.00	196.00	198.00	199.50
3D WinBench™ 2000 (D3D Software)	146.00	148.00	149.00	151.00	162.00	164.00	166.50	168.00
3DMark™ 2001 (Hardware T&L)	4934.00	4999.00	5101.00	5177.33	5212.67	5259.33	5302.67	5332.67
3DMark™ 2001 (D3D software)	2887.67	2957.00	3034.67	3100.00	3723.00	3796.00	3855.33	3916.67

Figure 2: Raw SDRAM Performance Data

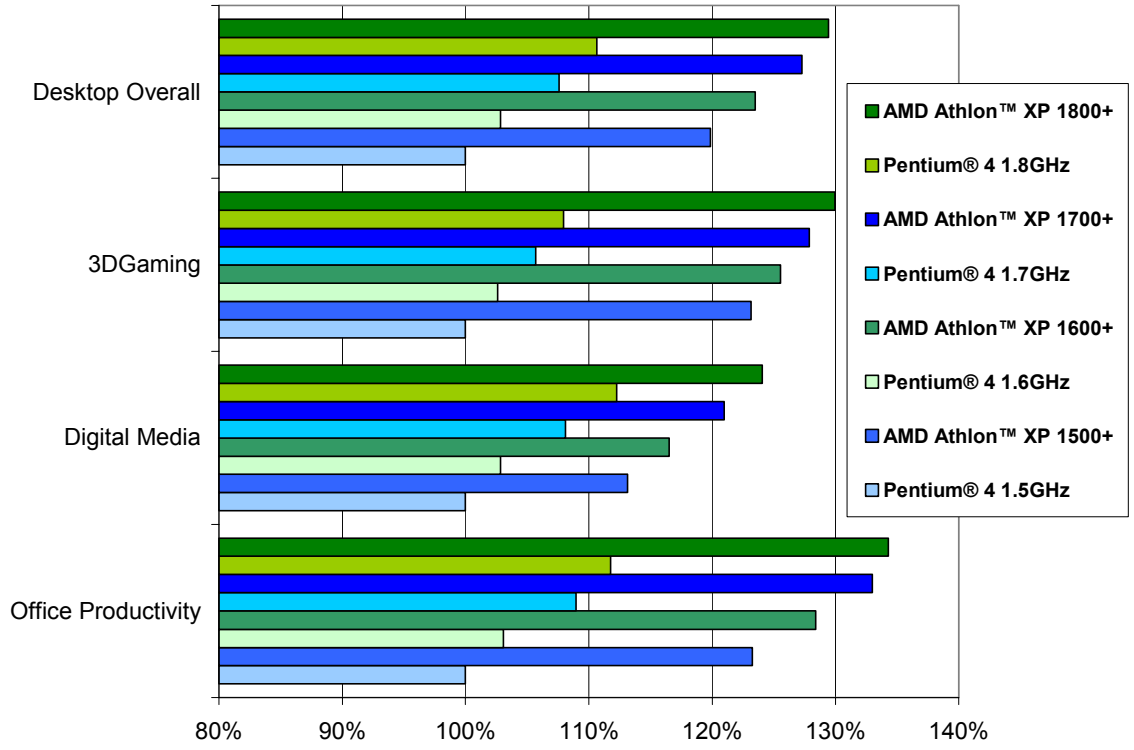

Figure 3: Normalized Competitive Benchmark Results[14]

The AMD Athlon XP processor clearly provides a performance advantage in the varying system price bands relative to competitive PC processors available on the market. The chart above demonstrates the different relative performance of AMD Athlon XP processors and Pentium 4 processors using SDRAM memory platforms.

[14] For a detailed breakdown of benchmark categories see pages 3 and 4.

Appendix E: Note on SYSmark™ 2001 Internet Content Creation

The SYSmark 2001 Internet Content Creation benchmark has as one of its components a subtest for Windows® Media Encoder version 7.0. Working with Microsoft, AMD has discovered that the version of Windows Media Encoder used by the SYSmark 2001 is optimized for 3DNow!™ Professional technology, but does not properly recognize the AMD Athlon XP processor as including this performance enhancing feature and therefore does not enable its use.

AMD and Microsoft have generated and tested a software update that correctly recognizes the AMD Athlon XP processor, and which is planned to be integrated into the next release of Windows Media Encoder. The tests in the above graphs show a significant performance improvement when Media Encoder is updated, which is more indicative of the performance benefits that an end user would see. This change is planned to be available in a forthcoming release from Microsoft which end users will have access to after the launch of Windows XP.

Appendix F: Benchmark System Configurations

AMD Athlon™ XP & AMD Athlon™ Processor DDR Memory System Configurations

Operating System	
Name:	Microsoft Windows XP Professional
Version:	RTM, no service packs / updates installed
Build #:	2600
DirectX Version:	DirectX 8.1 (4.08.01.0810)
Processor	
Name:	AMD Athlon™ XP processor 1800+, 1700+, 1600+, 1500+ AMD Athlon™ processor 1400MHz
Hardware	
Motherboard:	
Name:	Gigabyte GA-7DX (board rev. 4.0)
BIOS Info:	BIOS rev 7dX F5C
Is BIOS publicly available?	☒ Yes ☐ No
Chipset:	
Name:	AMD-760™
Memory:	
Manufacturer & Type:	Micron PC2100 (DDR SDRAM) Model: MT8VDDT1664AG-26AA1, PC-2100U-2330-A0
Quantity & Size: (each)/(MB)	Qty (2) 128MB DIMM Modules
Total Memory Size: (MB)	256MB total
Hard Drive:	
Model Name:	IBM
Model Number:	IC35L040AVER07-0
Hard Drive Size:	41.0GB
Transfer Mode:	UDMA 100
Other Info:	NTFS was used to format the hard disk, UDMA 5 is set in Device Manager
Network Card:	Allied Telesyn 10/100
Name:	AT2700TX
Model Number:	
Sound Card:	Sound Blaster Live!
Manufacturer's Name:	CT4670
Model Number:	N/A
Version Number:	
Video Card:	Leadtek Winfast GeForce3
Graphics Adapter:	64MB DDR
Memory Size (MB) and Type:	
Drivers	Publisher Name: Provided by Operating System
AGP Miniport	Publisher Name: Provided by Operating System
EIDE	Date if applicable: n/a DMA Enabled: ☒ Yes ☐ No ☐ N/A Publisher Name: Provided by Operating System
Network Card	Publisher Name: Provided by Operating System
Sound Card	Publisher Name: Nvidia
Video Card	Version: 5.13.01.1241 Date if applicable: 5/16/2001 Graphics Resolution: 1024x768 Color Depth: 32 bit Refresh Rate: 100Hz Texture Format: n/a
Other: (Specify any other special conditions or enhancements that are made to the system.)	

AMD Athlon™ XP & AMD Athlon™ Processor SDRAM Memory System Configurations

Operating System	
Name:	Microsoft Windows XP Professional
Version:	RTM, no service packs / updates installed
Build #:	2600
DirectX Version:	DirectX 8.1 (4.08.01.0810)
Processor	
Name:	AMD Athlon™ XP processor 1800+, 1700+, 1600+, 1500+ AMD Athlon™ processor 1400MHz
Hardware	
Motherboard:	
Name:	Asus A7V133 (rev 1.05)
BIOS Info:	BIOS rev 1006 beta 001-i
Is BIOS publicly available?	☐ Yes ☒ No
Chipset:	
Name:	AMD-760™
Memory:	
Manufacturer & Type:	Micron (PC-133 SDRAM) Model: MT16LSDT1664AG-13EC7, PC-133-222
Quantity & Size: (each)/(MB)	Qty (2) 128MB DIMM Modules
Total Memory Size: (MB)	256MB total
Hard Drive:	
Model Name:	IBM
Model Number:	IC35L040AVER07-0
Hard Drive Size:	41.0GB
Transfer Mode:	UDMA 100
Other Info:	NTFS was used to format the hard disk, UDMA 5 is set in Device Manager
Network Card:	
Name:	Allied Telesyn 10/100
Model Number:	AT2700TX
Sound Card:	
Manufacturer's Name:	Sound Blaster Live!
Model Number:	CT4670
Version Number:	N/A
Video Card:	
Graphics Adapter:	Leadtek Winfast GeForce3
Memory Size (MB) and Type:	64MB DDR
Drivers	
AGP Miniport	Publisher Name: Provided by Operating System
EIDE	Publisher Name: Provided by Operating System Date if applicable: n/a DMA Enabled: ☒ Yes ☐ No ☐ N/A
Network Card	Publisher Name: Provided by Operating System
Sound Card	Publisher Name: Provided by Operating System
Video Card	Publisher Name: Nvidia Version: 5.13.01.1241 Date if applicable: 5/16/2001 Graphics Resolution: 1024x768 Color Depth: 32 bit Refresh Rate: 100Hz Texture Format: n/a
Other: (Specify any other special conditions or enhancements that are made to the system.)	Details:

Intel Pentium® 4 Processor RDRAM Memory System Configuration

Operating System	
Name:	Microsoft Windows XP Professional
Version:	RTM, no service packs / updates installed
Build #:	2600
DirectX Version:	DirectX 8.1 (4.08.01.0810)
Processor	
Name:	Intel® Pentium® 4 processor 1.8GHz, 1.7GHz, 1.6GHz, 1.5GHz
Hardware	
Motherboard:	
Name:	Intel D850GB
BIOS Info:	BIOS version GB85010A.86A.0063.P14.017182015
Is BIOS publicly available?	☒ Yes ☐ No
Chipset:	Intel i850 Chipset
Memory:	
Manufacturer & Type:	PC-800 RDRAM®
Quantity & Size: (each)/(MB)	Qty. (2), 128MB RIMM Modules
Total Memory Size: (MB)	256MB total
Hard Drive:	
Model Name:	IBM
Model Number:	IC35L040AVER07-0
Hard Drive Size:	41.0GB
Transfer Mode:	UDMA 100
Other Info:	NTFS was used to format the hard disk, UDMA 5 is set in Device Manager
Network Card:	
Name:	Allied Telesyn 10/100
Model Number:	AT2700TX
Sound Card:	
Manufacturer's Name:	Sound Blaster Live!
Model Number:	CT4670
Version Number:	N/A
Video Card:	
Graphics Adapter:	Leadtek Winfast GeForce3
Memory Size (MB) and Type:	64MB DDR
Drivers	
AGP Miniport	Publisher Name: Provided by Operating System
EIDE	Publisher Name: Provided by Operating System Date if applicable: n/a DMA Enabled: ☒ Yes ☐ No ☐ N/A
Network Card	Publisher Name: Provided by Operating System
Sound Card	Publisher Name: Provided by Operating System
Video Card	Publisher Name: Nvidia Version: 5.13.01.1241 Date if applicable: 5/16/2001 Graphics Resolution: 1024x768 Color Depth: 32 bit Refresh Rate: 100Hz Texture Format: n/a
Other: (Specify any other special conditions or enhancements that are made to the system.)	Details:

Intel Pentium® 4 Processor SDRAM Memory System Configuration

Operating System	
Name:	Microsoft Windows XP Professional
Version:	RTM, no service packs / updates installed
Build #:	2600
DirectX Version:	DirectX 8.1 (4.08.01.0810)
Processor	
Name:	Intel® Pentium® 4 processor 1.8GHz, 1.7GHz, 1.6GHz, 1.5GHz
Hardware	
Motherboard:	
Name:	Intel D845WN
BIOS Info:	HV84510A.86A.0018.P04.0107302001
Is BIOS publicly available?	☒ Yes ☐ No
Chipset:	
Name:	Intel i845 Chipset
Memory:	
Manufacturer & Type:	PC-800 RDRAM®
Quantity & Size: (each)/(MB)	Qty. (2), 128MB RIMM Modules
Total Memory Size: (MB)	256MB total
Hard Drive:	
Model Name:	IBM
Model Number:	IC35L040AVER07-0
Hard Drive Size:	41.0GB
Transfer Mode:	UDMA 100
Other Info:	NTFS was used to format the hard disk, UDMA 5 is set in Device Manager
Network Card:	
Name:	Allied Telesyn 10/100
Model Number:	AT2700TX
Sound Card:	
Manufacturer's Name:	Sound Blaster Live!
Model Number:	CT4670
Version Number:	N/A
Video Card:	
Graphics Adapter:	Leadtek Winfast GeForce3
Memory Size (MB) and Type:	64MB DDR
Drivers	
AGP Miniport	Publisher Name: Provided by Operating System
EIDE	Publisher Name: Provided by Operating System Date if applicable: n/a DMA Enabled: ☒ Yes ☐ No ☐ N/A
Network Card	Publisher Name: Provided by Operating System
Sound Card	Publisher Name: Provided by Operating System
Video Card	Publisher Name: NVidia Version: 5.13.01.1241 Date if applicable: 5/16/2001 Graphics Resolution: 1024x768 Color Depth: 32 bit Refresh Rate: 100Hz Texture Format: n/a
Other: (Specify any other special conditions or enhancements that are made to the system.)	Details:

AMD Overview

AMD is a global supplier of integrated circuits for the personal and networked computer and communications markets with manufacturing facilities in the United States, Europe, Japan, and Asia. AMD, a Fortune 500 and Standard & Poor's 500 company, produces microprocessors, Flash memory devices, and support circuitry for communications and networking applications. Founded in 1969 and based in Sunnyvale, California, AMD had revenues of $4.6 billion in 2000. (NYSE: AMD).